

NOT TO SCALE

**BROWN AND
CALDWELL**

Date: March 2008

Atlantic Richfield
Company

Project: 134557

**Well B/W-19D
Construction Details**

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment

Project Number: 132025

Soil Boring: ☐Monitoring Well: ☒Piezometer: ☐

Boring/Well Number: B/W-19D

Sheet 1 of 16

Boring Location: On Mason Pass road, 1 mile north of the Mason Pass - Luzier Lane junction		Northing:	Easting:
Drilling Contractor: Boart Longyear	Driller: R. Salois	Top of PVC Elevation: feet amsl	
Drilling Equipment: GP24-300RS	Borehole Diameter: 6-inches	Ground Surface Elevation: feet amsl	
Drilling Method: Sonic	Drilling Fluid: Water	Date Started: 5/30/07	Date Finished: 6/13/07
Sampling Method: Core Barrel		Completed Depth: 300 fbgs	Water Depth: fbmp
Well Seal: Bentonite and Cement		WELL CONSTRUCTION	
Logged By: C. Gardner, C. Strauss, and R. Banda		Type and Diameter of Well Casing: 2-inch Schedule 80 PVC	
		Slot Size: 0.010 inch	Filter Material: #10-20 Silica Sand

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
5		SW-SM	Well-Graded Sand with Silt and Gravel (0 - 13.5) Dry, loose, no odor. Primarily medium to fine sand with ~20% gravel to 25 mm and ~10% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and have a strong reaction to HCl. Some gravel up to 6" which are flat and elongated.					<p>Description of drilled cuttings based on ASTM Method D-2488 (the visual-manual procedure), grain-size determinations and nomenclature based on the Unified Soil Classification System.</p> <p>Horizontal Survey data is expressed in the Nevada State Plane system, Nevada West zone, in feet.</p> <p>Sharp contacts indicated by solid lines, gradational contacts indicated by dashed line.</p> <p>All depths are below land surface unless stated otherwise.</p> <p>WELL DESIGN for B/W-19D: PVC Stickup: feet Cement - Bentonite Grout: 0 - 196 feet Bentonite Chips: 196 - 201 feet No. 60 Silica Sand: 201 - 202 feet #10-20 Silica Sand Filter Pack: 202 - 230.5 feet 2-inch Nominal Schedule 80 PVC 0.010 Slotted Screen: 204.5 - 224.5 feet Native Collapse: 270 - 300 feet Additional Bentonite Fill: 230.5 - 270 feet</p> <p>Number of wells at this location: 3 Screen intervals for paired wells are labeled at the installed depths.</p>
10		SM	Silty Sand (13.5 - 15) Dry, loose, no odor. Primarily medium to fine sand with ~10% gravel to 20 mm and ~20% silt and clay. The sand and gravel are angular to subangular. The fines have low plasticity and toughness, and have a weak to					

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Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
20		SM	<p>strong reaction to HCl. Some flat, elongated gravel up to 4-inches.</p> <p>Silty Sand with Gravel (15 - 22) Dry, medium dense, no odor. Primarily medium to fine sand with ~15% gravel to 50 mm and ~15% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and have a strong reaction to HCl.</p>					
25		SC	<p>Clayey Sand (22 - 23) Dry, dense, no odor. Primarily medium to fine sand with ~5% gravel to 15 mm and ~25% silt and clay. The sand and gravel are angular to subangular. The fines have medium plasticity with low toughness, and have a strong reaction to HCl.</p>					
		SM	<p>Silty Sand with Gravel (23 - 25) Dry, dense, no odor. Primarily coarse to fine sand with ~20% gravel to 40 mm and ~20% silt and clay. The sand and gravel are angular to subangular. The fines have low plasticity and toughness, and have a strong reaction to HCl.</p>					
		SC	<p>Clayey Sand (25 - 28) Dry, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 10 mm and ~15% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and have a strong reaction to HCl.</p>					
30		SW-SM	<p>Well-Graded Sand with Silt and Gravel (28 - 32.5) Dry, very dense, no odor. Primarily coarse to fine sand with ~30% gravel to 60 mm and ~10% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and have no reaction to strong reaction to HCl. Some of the gravel are elongated.</p>					
		SP	<p>Poorly Graded Sand (32.5 - 34) Dry, very dense, no odor. Primarily medium sand with ~10% gravel to 15 mm and ~5% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and do not react to HCl.</p>					

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Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
35		GW-GM	Well-Graded Gravel with Silt and Sand (34 - 35) Dry, very dense, no odor. Primarily gravel to 60 mm, ~35% coarse to medium sand and ~10% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and do not react to HCl.					
		SW-SM						
		SM	Well-Graded Sand with Silt and Gravel (35 - 36) Dry, very dense, no odor. Primarily medium to coarse sand with ~20% gravel to 20 mm and ~10% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and do not react to HCl.					
			Silty Sand with Gravel (36 - 39) Dry, very dense, no odor. Primarily coarse to fine sand with ~20% gravel to 15 mm and ~20% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and do not react to HCl.					
40		SW-SM	Well-Graded Sand with Silt and Gravel (39 - 44.5) Dry, very dense, no odor. Primarily medium sand with ~15% gravel to 15 mm and ~10% silt and clay. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, and do not react to HCl.					
45		SM	Silty Sand (44.5 - 45) Dry, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 15 mm and ~15% silt and clay. The sand and gravel are angular to subangular. The fines have low plasticity and toughness, and do not react to HCl.					
		SM	Silty Sand (45 - 47.5) Dry, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 15 mm and ~15% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and do not react to HCl.					
		SM	Silty Sand (47.5 - 51.5) Dry, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 25 mm and ~20% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic to low plasticity and toughness, and have no reaction to strong reaction to HCl.					
50		SW-SM	Well-Graded Sand with Silt (51.5 - 54.5) Dry, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 30 mm and ~10% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and have no reaction to strong					

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Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
			reaction to HCl.					
55		SC	Clayey Sand (54.5 - 55) Dry,very dense, no odor. Primarily coarse to fine sand with ~10% gravel to 20 mm and ~35% silt and clay. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, and have a strong reaction to HCl.					
		SW-SM						
		SW-SM	Well-Graded Sand with Silt and Gravel (55 - 56) Dry,very dense, no odor. Primarily coarse to fine sand with ~20% gravel to 20 mm and ~10% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and have a strong reaction to HCl.					
			Well-Graded Sand with Silt (56 - 62) Dry,very dense, no odor. Primarily medium to fine sand with ~5% gravel to 20 mm and ~20% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic to low plasticity and toughness, and have a strong reaction to HCl.					
60								
		SP-SM	Poorly Graded Sand with Silt (62 - 63.5) Dry,very dense, no odor. Primarily medium to fine sand with ~5% gravel to 15 mm and ~20% silt and clay. The sand and gravel are angular to subangular. The fines have low plasticity and toughness, and have a strong reaction to HCl.					
		SP-SM	Poorly Graded Sand with Silt (63.5 - 65) Dry,very dense, no odor. Primarily medium to fine sand with ~10% gravel to ~15 mm and 35% silt and clay. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, and do not react to HCl.					
65		SW-SM	Well-Graded Sand with Silt and Gravel (65 - 75) Dry,dense, no odor. Primarily coarse to fine sand with ~15% gravel to 40 mm and ~15% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and do not react to HCl. Zone has 6-inch interbedded sand with silt lenses that have ~15% gravel to 10 mm with ~10% coarse grained sand and ~65% medium to fine grained sand at ~66-66.5 fbg and ~69.5-70.5 fbg.					
70								

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Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
75		SP-SM	Poorly Graded Sand with Silt (75 - 76.5) Dry, dense, no odor. Primarily medium to fine sand with ~5% gravel to 30 mm and ~10% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
		SP-SM	Poorly Graded Sand with Silt (76.5 - 79) Dry, dense, no odor. Primarily medium to fine sand with ~5% gravel to 20 mm and ~20% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and have a strong reaction to HCl.					
		SC	Clayey Sand (79 - 79.5) Dry, very dense, no odor. Primarily medium to fine sand with grain size up to 5 mm and ~35% silt and clay. The sand and gravel are subangular to subrounded. The fines have medium plasticity and toughness, and have a strong reaction to HCl.					
80		SW-SM	Well-Graded Sand with Silt and Gravel (79.5 - 81) Dry, very dense, no odor. Primarily coarse to fine sand with ~15% gravel to 10 mm and ~15% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and do not react to HCl.					
		SW	Well-graded Sand with Silt (81 - 83) Dry, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 30 mm and ~10% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
		SM	Well-Graded Sand (83 - 84.5) Dry, very dense, no odor. Primarily medium to coarse sand with ~10% gravel to 10 mm and ~5% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and do not react to HCl.					
85		SW	Silty Sand (84.5 - 86) Dry, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 10 mm and ~30% silt and clay. The sand and gravel are angular to subangular. The fines have low plasticity and toughness, and have a strong reaction to HCl.					
		SC	Well-Graded Sand (86 - 88.5) Dry to moist, very dense, no odor. Primarily medium to coarse sand with ~10% gravel to 20 mm and ~10% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and have a weak reaction to HCl.					
		SM	Clayey Sand (88.5 - 89) Dry, very dense, no odor. Primarily medium to fine sand with grain size up to 5 mm and ~35% silt and clay. The sand is angular to subangular. The fines have medium plasticity and toughness, and have a weak reaction to HCl.					
90			Silty Sand (89 - 92.5)					

← B/W-19S screened from 90 to 110 feet

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Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
95			Moist, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 10 mm and ~20% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic to low plasticity and toughness, and have no reaction to a weak reaction to HCl.					
		SM	Silty Sand (92.5 - 93)					
		SM	Moist to saturated, very dense, no odor. Primarily coarse to fine sand with ~10% gravel to 25 mm and ~15% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and do not react to HCl.					
		SW	Silty Sand (93 - 95) Moist to saturated, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 20 mm and ~20% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and have a weak reaction to HCl.					
		SM	Well-Graded Sand with Gravel (95 - 97) Saturated, very dense, no odor. Primarily medium to fine sand with ~20% gravel to 10 mm and ~10% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and have a strong reaction to HCl.					
		GW	Silty Sand with Gravel (97 - 98) Moist, very dense, no odor. Primarily coarse to fine sand with ~20% gravel to 20 mm and ~35% silt and clay. The sand and gravel are angular to subangular. The fines have low plasticity and toughness, and have a strong reaction to HCl.					
100		SM	Well-Graded Gravel with Sand (98 - 100) Saturated, very dense, no odor. Primarily gravel to ~30 mm, ~40% coarse to medium sand and ~5% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and have a strong reaction to HCl.					
		SW-SM	Silty Sand (100 - 102) Saturated, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 25 mm and ~20% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and have a strong reaction to HCl.					
			Well-Graded Sand with Silt (102 - 104.5) Saturated, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 20 mm and ~10% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and have a strong reaction to HCl.					
105		SC						
		SW-SM	Clayey Sand (104.5 - 105) Saturated, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 25 mm and ~40% silt and clay. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, and have a strong reaction to HCl.					
			Well-Graded Sand with Silt and Gravel (105 - 109.5) Saturated, very dense, no odor. Primarily medium to coarse sand with ~20% gravel to 30 mm and ~10% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and have a strong reaction to HCl.					
110		SM	Silty Sand with Gravel (109.5 - 115) Moist, very dense, no odor. Primarily medium to fine					

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Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
115			sand with ~20% gravel to 25 mm and ~35% silt and clay. The sand and gravel are angular to subangular. The fines have low plasticity and toughness, and have a strong reaction to HCl.					
		SW-SM	Well-Graded Sand with Silt and Gravel (115 - 122) Saturated, dense, no odor. Primarily medium to coarse sand with ~15% gravel to 25 mm and ~10% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and have a weak to strong reaction to HCl. There are some gravel up to 60 mm.					
120				B/W-19D@117-122				
		SM	Silty Sand (122 - 125) Dry to moist, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 20 mm and ~35% silt and clay. The sand and gravel are angular to subrounded. The fines have low plasticity and toughness, and have a strong reaction to HCl.					
125		SM	Silty Sand with Gravel (125 - 127) Moist, very dense, no odor. Primarily coarse to fine sand with ~15% gravel to 40 mm and ~15% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and have a weak to strong reaction to HCl.					
		SM	Silty Sand (127 - 134.5) Dry to moist, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 25 mm and ~40% silt and clay. The sand and gravel are subangular to subrounded. The fines have low plasticity and toughness, and have a weak to strong reaction to HCl.					

BORING LOG

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Project Number: 132025

Soil Boring: ☐

Monitoring Well: ☒

Piezometer: ☐

Boring/Well Number: B/W-19D

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Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
130								
135		SM	Silty Sand (134.5 - 135) Moist, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 20 mm and ~15% silt and clay. The sand is angular to subangular. The fines are nonplastic, and have a strong reaction to HCl.					
		SM	Silty Sand (135 - 140) Moist, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 20 mm and ~30% silt and clay. The sand and gravel are subangular to subrounded. The fines have low plasticity and toughness, and have a strong reaction to HCl.					
140		SM	Silty Sand (140 - 145) Dry to moist, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 15 mm and ~20% silt and clay. The sand and gravel are angular to subangular. The fines have low plasticity and toughness, and have no reaction to strong reaction to HCl.					
145		SW-SM	Well-Graded Sand with Silt (145 - 148) Saturated, very dense, no odor. Primarily medium to coarse sand with ~10% gravel to 25 mm and ~10% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and do not react to HCl.	B/W-19D@145-150				

B/W-19I screened from 140 to 160 feet

BORING LOG

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Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐

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Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
150		SM	Silty Sand (148 - 150) Moist, dense, no odor. Primarily medium to fine sand with ~5% gravel to 15 mm and ~25% silt and clay. The sand and gravel are subangular to subrounded. The fines have low plasticity and toughness, and have a strong reaction to HCl.					
		SC	Clayey Sand (150 - 157) Dry to moist, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 15 mm and ~30% silt and clay. The sand and gravel are subangular to subrounded. The fines have medium plasticity and toughness, and have a weak to strong reaction to HCl.					
155								
		SM	Silty Sand with Gravel (157 - 165.5) Saturated, dense, no odor. Primarily medium to coarse sand with ~15% gravel to 30 mm and ~15% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and have a strong reaction to HCl. Zone has some thinly interbedded sand with silt layers.					
160								
165		SW	Well-Graded Sand (165.5 - 168) Saturated, dense, no odor. Primarily medium sand with ~10% gravel to 20 mm and ~10% silt and clay. The gravel is angular to subangular and the sand is subangular to subrounded. The fines are nonplastic, and have a weak to strong reaction to HCl.					

BORING LOG

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Soil Boring: ☐

Monitoring Well: ☒

Piezometer: ☐

Boring/Well Number: B/W-19D

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Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
170		SM	Silty Sand (168 - 170) Moist, very dense, no odor. Primarily medium sand with ~5% gravel to 20 mm and ~20% silt and clay. The gravel is angular to subangular and the sand is subangular to subrounded. The fines are nonplastic, and have a strong reaction to HCl.	B/W-19D@165-170				
		SW-SM	Well-Graded Sand with Silt (170 - 175) Saturated, dense, no odor. Primarily medium sand with ~10% gravel to 50 mm and ~10% silt and clay. The gravel is angular to subangular and the sand is subangular to subrounded. The fines are nonplastic, and have no reaction to a weak reaction to HCl.					
175		CL	Sandy Lean Clay (175 - 181) Dry, very dense, no odor. Primarily silt and clay with ~35% medium to fine sand with ~10% gravel up to 15 mm. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, have the 7.5 YR 5/4 brown color with some gray interbeds, and have no reaction to strong reaction to HCl.					
180		SC	Clayey Sand (181 - 184) Dry, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 15 mm and ~35% silt and clay. The gravel is angular to subangular and the sand is subangular to subrounded. The fines have medium plasticity and toughness, and have a strong reaction to HCl.					
185		SM	Silty Sand (184 - 191) Dry, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 50 mm and ~35% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic to low plasticity and toughness, and have a weak to strong reaction to HCl.					

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Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐

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Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
190								
		SC	Clayey Sand (191 - 193) Moist, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 15 mm and ~25% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and do not react to HCl.					
195		CL	Sandy Lean Clay (193 - 200) Dry, very dense, no odor. Primarily silt and clay with ~35% medium to fine sand and ~5% gravel to 20 mm. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, have the 7.5 YR 5/4 brown color, and have no reaction to strong reaction to HCl.					
200		SC	Clayey Sand (200 - 205) Moist, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 10 mm and ~25% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and do not react to HCl.					
205			Clayey Sand (205 - 207.5)					

B/W-19D screened from 204.5 to 224.5 feet

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Monitoring Well: ☒

Piezometer: ☐

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Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
210		SC	Moist, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 10 mm and ~35% silt and clay. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, and have no reaction to strong reaction to HCl.					
		SC	Clayey Sand (207.5 - 210) Dry to moist, very dense, no odor. Primarily medium to fine sand with ~15% gravel to 15 mm and ~30% silt and clay. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, and do not react to HCl.					
		SM	Silty Sand with Gravel (210 - 211.5) Dry to moist, very dense, no odor. Primarily medium to fine sand with ~15% gravel to 10 mm and ~25% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic to low plasticity and toughness, and do not react to HCl.					
		SC	Clayey Sand (211.5 - 215) Dry to moist, very dense, no odor. Primarily medium to fine sand with ~15% gravel to 15 mm and ~30% silt and clay. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, and do not react to HCl.					
	215	SM	Silty Sand with Gravel (215 - 217) Dry to moist with some saturated seams, dense, no odor. Primarily medium to fine sand with ~20% gravel to 30 mm and ~20% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and do not react to HCl.					
		SM	Silty Sand with Gravel (217 - 222) Dry to moist, very dense, no odor. Primarily medium to fine sand with ~15% gravel to 20 mm and ~30% silt and clay. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, and have no reaction to a weak reaction to HCl.					
220		SM	Silty Sand with Gravel (222 - 222.5) Saturated, dense, no odor. Primarily medium to coarse sand with ~15% gravel to 50 mm and ~20% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and do not react to HCl.					
		SM						
		SM	Silty Sand (222.5 - 223.5) Moist, very dense, no odor. Primarily medium to fine					

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Monitoring Well: ☒

Piezometer: ☐

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Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
225		CL	sand with ~10% gravel to 10 mm and ~35% silt and clay. The sand and gravel are subangular to subrounded. The fines have medium plasticity and toughness, and have no reaction to strong reaction to HCl.					
		SM	Silty Sand (223.5 - 224.5) Dry to moist, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 15 mm and ~25% silt and clay. The sand and gravel are angular to subangular. The fines have low plasticity and toughness, and do not react to HCl.					
		SM	Sandy Lean Clay (224.5 - 225) Dry, very dense, no odor. Primarily silt and clay with ~30% medium to fine sand with ~5% gravel to 10 mm. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, have 7.5 YR 5/4 brown color, and have a strong reaction to HCl.					
230			Silty Sand (225 - 228) Moist, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 10 mm and ~35% silt and clay. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, and have a weak to strong reaction to HCl.					
			Silty Sand (228 - 232) Dry to moist, very dense, no odor. Primarily medium to fine sand with a maximum grain size of ~1 mm. The sand is subangular to subrounded. The fines are nonplastic to low plasticity and toughness, and do not react to HCl.					
		CL						
		CL						
		SM	Sandy Lean Clay (232 - 232.5) Dry, very dense, no odor. Primarily silt and clay with ~40% medium to fine sand with trace gravel to 10 mm. The gravel is angular to subangular and the sand is subangular to subrounded. The fines have medium plasticity and toughness, have 7.5 YR 5/4 brown color, and have a strong reaction to HCl.					
235			Sandy Lean Clay (232.5 - 233.5) Dry to moist, very dense, no odor. Primarily silt and clay with no gravel and a maximum grain size of ~5 mm. The gravel is angular to subangular and the sand is subangular to subrounded. The fines have medium plasticity and toughness, have 7.5 YR 5/4 brown color, and have a strong reaction to HCl.					
			Silty Sand (233.5 - 239) Dry, very dense, no odor. Primarily medium to fine sand with trace gravel to 10 mm and ~40% silt and clay. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, have the 7.5 YR 5/4 brown, and have a strong reaction to HCl.					
		SM	Silty Sand (239 - 241) Dry, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 10 mm and ~35% silt and clay. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, and have a strong reaction to HCl.					
240		SM	Silty Sand (241 - 252) Dry, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 10 mm and ~30% silt and clay. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, and have a strong reaction to HCl.					

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment

Project Number: 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐

Boring/Well Number: B/W-19D

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Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
245								
250								
255		CL	Sandy Lean Clay (252 - 257) Dry, very dense, no odor. Primarily silt and clay with with ~35% medium to fine sand with ~5% gravel to 10 mm. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, have the 7.5 YR 5/4 brown, and have a strong reaction to HCl. Zone is well indurated with CaCO3.					
260		SC	Clayey Sand with Gravel (257 - 260) Dry, very dense, no odor. Primarily medium to fine sand with ~20% gravel to 15 mm and ~40% silt and clay. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, and have a strong reaction to HCl. Zone is well indurated with CaCO3.					
		CL	Sandy Lean Clay (260 - 277.5) Dry, very dense, no odor. Primarily silt and clay with ~40% coarse to fine sand with ~10% gravel to 10 mm. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, have the 7.5 YR 5/4 brown color, and have a strong reaction to HCl. Zone becomes dry to moist at 271.5 fbgs.					

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment

Project Number: 132025

Soil Boring: ☐

Monitoring Well: ☒

Piezometer: ☐

Boring/Well Number: B/W-19D

Sheet 15 of 16

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
265								
270								
275								
		SC	Clayey Sand (277.5 - 278) Dry to moist, very dense, no odor. Primarily coarse to fine sand with ~5% gravel to ~10 mm and 30% silt and clay. The sand and gravel are angular to subangular. The fines have medium plasticity with low toughness, have a brown color, and have a strong reaction to HCl.					
		SC	Clayey Sand (278 - 284.5) Dry, very dense, no odor. Primarily coarse to fine sand with ~10% gravel to 10 mm and ~40% silt and clay. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, have a brown color, and have a strong reaction to HCl.					
280								

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment

Project Number: 132025


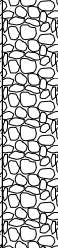


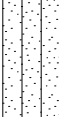



Soil Boring: ☐

Monitoring Well: ☒

Piezometer: ☐

Boring/Well Number: B/W-19D

Sheet **16** of **16**

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
285		CL SM	<p>Sandy Lean Clay (284.5 - 285) Dry, very dense, no odor. Primarily silt and clay with ~5% gravel to 15 mm and ~35% medium to fine grained sand. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, and have a strong reaction to HCl.</p> <p>Silty Sand (285 - 291) Dry to moist, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 40 mm and ~30% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic to low plasticity and toughness, have a brown color, and have a strong reaction to HCl.</p>					
290		CL	<p>Sandy Lean Clay (291 - 292.5) Dry, very dense, no odor. Primarily silt and clay with ~30% medium to fine sand and ~10% gravel to 15 mm. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, and have a strong reaction to HCl.</p>					
295		CH	<p>Fat Clay with Sand (292.5 - 296) Dry to moist, very dense, no odor. Primarily silt and clay with ~20% coarse sand with ~10% gravel to 15 mm. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, and have a strong reaction to HCl.</p>					
300		SC	<p>Sandy Lean Clay (296 - 300) Dry, very dense, no odor. Primarily coarse to fine sand with ~10% gravel to 15 mm and ~35% silt and clay. The sand and gravel are angular to subangular. The fines have medium plasticity and toughness, and have a strong reaction to HCl.</p>					
			Bottom of Borehole at 300 feet below ground surface.					